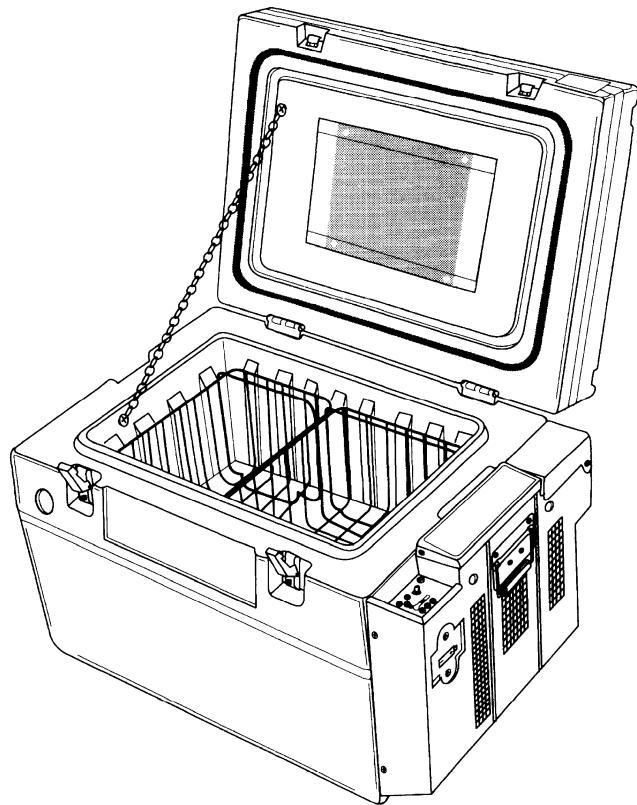




THERMOSTABILIZER



RCB 42 P
MRT 42 P

USER'S MANUAL

MODE D'EMPLOI

BEDIENUNGSANLEITUNG

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1

GENERAL DESCRIPTION

The THERMOSTABILIZER RCB42P is a refrigerating unit which is suitable for storing and transporting pre-cooled blood products and medicinal products, such as vaccines etc..

Up to 30 bags of blood, each containing 500 ml, can be stored and transported in the cool box.

A thermoelectric unit (Peltier block) together with an electronic control unit keeps the temperature in the cool box constant.

The thermoelectric unit is switched automatically from cooling to heating, depending on the ambient temperature.

The cool box can be operated with either direct current (DC battery voltage) of 11 V to 42 V or alternating current (AC supply voltage) of 90 V to 264 V, frequency 48 Hz to 62 Hz.

The insulation allows the temperature in the cool box to be kept constant for up to 8 hours when transporting or storing items without power supply at an ambient temperature of 25°C (77°F).

2

THE THERMOELECTRIC UNIT

The core of the thermoelectric unit is composed of two elements which operate according to the Peltier effect.

This effect is based on the connection of two different semiconductors. If direct current flows through the junction of these two conductors, heat or cold, depending on the direction of the current, is generated at this junction. By reversing the direction of the current (pole reversal), it is possible to switch from heating to cooling or vice versa.

An electronic control unit measures the temperature in the cool box and controls the polarity and operating factor of the appliance. In this way the inside temperature of the appliance is kept constant between two set limits.

3

SAFETY INSTRUCTIONS

Please read this manual carefully before using the THERMOSTABILIZER. It contains important instructions for the operational safety, use, maintenance and repair of the appliance. Keep the manual in a safe place for future reference and make sure that it is retained with the appliance when the appliance is transferred to a new location for owner, so that information about operation and safety regulations is available for every user.

Every user must be well acquainted with the operation of the appliance and with the instructions concerning safety. Failure to observe these instructions can impair the performance of the appliance and cause damage.

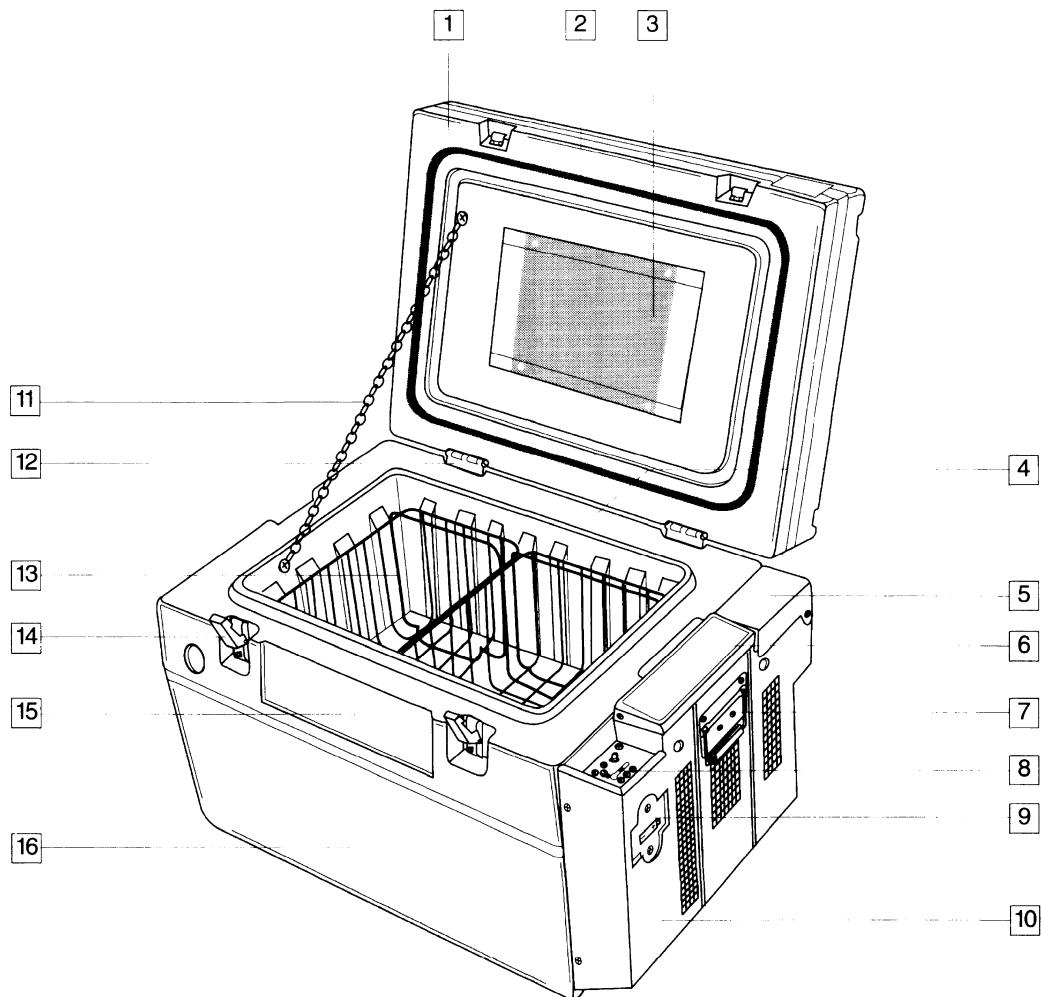
- The appliance may only be used by adults. Do not allow children to play with it or to tamper with the controls.
- Do not use a damaged appliance. Any damage must be repaired before putting into operation.
- Connection to the mains and installation are to be carried out in accordance with the operating instructions. Electrical connections must be compatible with the data on the type plate.
- The electrical safety of the appliance can only be guaranteed if the power supply earthing system has been installed in accordance with the regulations.
- When disconnecting the electrical supply, eg plug - socket, always take hold of the plug - not the connecting cable - to disconnect.
- If there is a malfunction, or before servicing or cleaning the appliance, switch off and disconnect from the mains. Pull out the mains plug or, if this is inaccessible, disconnect the fuse.
- Repairs to the appliance are only to be carried out by qualified persons.
- Do not cover or block the appliance's vents. Make sure that air can flow freely through the vents.

- Make sure that no objects or liquids enter the appliance through the vents.
- Do not constrict or damage the connecting cable when installing or moving the appliance.
- Have the appliance serviced once a year by a service engineer.
- Remove the lid before disposing of the appliance, to prevent children from becoming trapped inside.

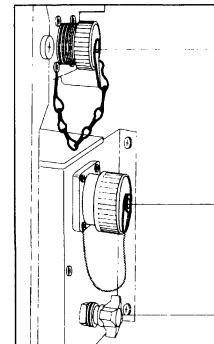
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TECHNICAL DATA

Dimensions :	Length :	840 mm
	Width :	550 mm
	Height :	500 mm
Gross volume :	43 litres	
Storage and transport capacity :	30 whole blood bags, each containing 500 ml 50 packs of red blood corpuscles, each containing 270 ml	
Weight:	empty : 29 kg loaded : 44 kg (with 30 whole blood bags, each containing 500 ml)	
Energy supply of box :	AC supply voltage : 90 V to 264 V frequency: 48 Hz to 62 Hz DC battery voltage : 11 V to 42 V	
Connected load :	AC supply voltage : 130 W DC battery voltage : 120 W	
Energy consumption over 24 hours :	1.92 kW/h at an ambient temperature of 25°C (77°F) (mains and battery operation)	
Energy supply of alarm system :	4 nickel cadmium storage batteries Type AA (Mignon 1,2V/R6) 500 to 750 mAh operating time without mains connection ≤ 24 hours charging time during operation: 48 hours charging time in battery charger: 14 hours at 50 mA	
Safety category :	splash-proof protection in accordance with IP 54	
Interference suppression :	EMC in accordance with MIL standard 461-462 704D and EC directive 89/336 EEC	
Low-voltage :	in accordance with EC directives 73/23/EEC and 93/68/EEC	
Ambient conditions :	temperature range: -32°C (-25°F) to +44°C (111°F) protect box from heavy rain, sand and snow	



- 1 Lid
- 2 Sealing
- 3 Document pocket
- 4 Type plate (rear of appliance)
- 5 Temperature recorder compartment (optional)
- 6 Storage compartment
- 7 Handle
- 8 Operating panel
- 9 Battery compartment
- 10 Cover
- 11 Chain
- 12 Hinge
- 13 Basket
- 14 Spring lock
- 15 Label surface
- 16 Container
- 17 Connection for temperature recorder
- 18 Connection for AC/DC power supply
- 19 Equipotential bonding connection



6

UNPACKING

After unpacking the appliance, first make sure it has not been damaged in transit.

If any damage has been incurred, please inform the responsible supplier immediately and submit the delivery note or proof of purchase.

UNDER NO CIRCUMSTANCES MAY A DAMAGED APPLIANCE BE PUT INTO OPERATION.

Most of the packaging can be recycled and should therefore be taken to the area recycling centre. Please remember that, with regard to environmental protection, the remaining materials should be disposed of in a proper and orderly manner.

7

CLEANING

Before putting into operation, the interior and exterior should always be cleaned :

- Add some mild detergent to lukewarm water
- Clean the interior and exterior of the appliance with a damp cloth.
- Dry the cleaned parts thoroughly; never use any kind of heater for this purpose.

**NEVER USE ACIDIC OR CAUSTIC DETERGENTS, SCOURING POWDER,
STEEL WOOL, ABRASIVE SPONGES, CHEMICAL SOLVENTS
OR POLISHES TO CLEAN THE APPLIANCE.**

Once the appliance has been put into operation, clean the container, lid and storage baskets regularly.

Remove any dust and dirt from the covers inside and outside the appliance, and from underneath the covers several times a year with a brush or a vacuum cleaner.

8

INSTALLATION

In order to ensure perfect operation, please observe the following :

- Install the appliance in a dry, well ventilated room.
- Make sure the appliance is positioned firmly and securely.
- There should be a distance of approximately 10 cm from any walls or adjacent appliances.
- Do not expose the appliance to direct sunlight or operate it in the immediate vicinity of other sources of heat.
- Make sure that air can circulate freely through the vents and that these remain unobstructed at all times.
- No objects or liquids should be allowed to enter the appliance through the vents.

The THERMOSTABILIZER is splash-proof. When using outdoors however, the appliance should be protected against sand, snow and heavy rain.

9

ENERGY SUPPLY

The appliance can be operated with either direct or alternating current.

The following voltage ranges are covered by the energy supply unit :

AC operation :	voltage :	90 V - 264 V
	frequency :	48 Hz - 62 Hz
DC operation :	voltage :	11 V - 42 V

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CONNECTING UP

Two 2-meter-long connecting cables, one for mains and one for battery connection, are supplied with each appliance. These cables have to be fitted with plugs which conform to the local regulations.

The wires of the mains lead are coloured in accordance with the following code :

Green / Yellow : Earth

Blue : Neutral

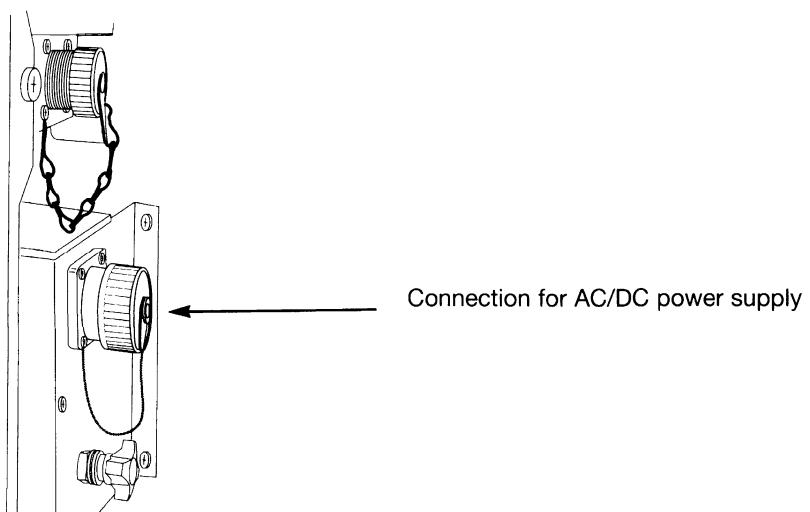
Brown : Live

Warning : The appliance must be earthed !

The wires of the battery connection cable are marked with „+“ and „-“ symbols.

Always connect up the appliance to a separately fused circuit, in order to prevent breakdown caused by problems with other electrical appliances.

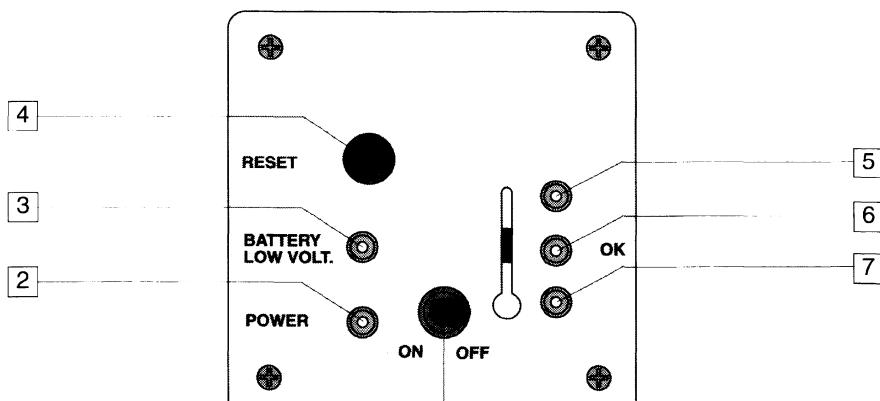
THE CONNECTION OF THE PLUGS AS WELL AS ANY MODIFICATIONS TO THE CONNECTING CABLES MAY ONLY BE MADE BY A QUALIFIED ELECTRICIAN.



- Select the cable appropriate for the power supply you wish to use.
- Remove the cover cap from the appliance inlet by turning anticlockwise.
- Connect the selected connecting cable outlet to the appliance inlet and turn the bayonet lock clockwise until it locks into place.
- Plug the cable into the power supply you wish to use (battery or mains).

11

OPERATING PANEL



1

1 On/Off switch

2 LED green power control lamp
3 LED red battery voltage too low
4 Reset button for alarm

Temperature control lamps :

5 LED red inside temperature too high
6 LED green inside temperature OK
7 LED red inside temperature too low

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OPERATION

SWITCHING ON :

- Flip the switch 1 to „ON“.
- The power control lamp 2 lights up.

Depending on the temperature inside the cool box, LED 5, 6 or 7 lights up or flashes:

Temperature control lamp	Inside temperature	
5 flashes	too high	After a period of time the temperature inside the cool box reaches the value set of 2-8°C (35-46°F) by means of the cooling operation
6 lights up	ok (2-8°C / 35-46°F)	The cool box can be filled with precooled bags of blood or vaccines.
7 flashes	too low	After a period of time the temperature inside the cool box reaches the value set of 2-8°C (35-46°F) by means of the heating operation.

When the appliance is switched on for the first time, the acoustic alarm is locked.

If the lid of the appliance is left open for some time during operation, the temperature probe may record, due to the warm flow of air, a temperature which is outside the given limits and the alarm will be triggered off.

- Close the lid immediately.
- Press the reset button **4**. The acoustic alarm stops and the LED continues to flash.

The preset temperature is regained when the control lamp **6** lights up. The flashing LED **5** or **7** can now be reset by pressing the reset button **4**.

SWITCHING OFF :

- Flip the switch **1** to „OFF“.

The control lamp **2** goes out and the temperature control lamps are no longer lighted. The alarm system is switched off.

If switch **1** is left in the „ON“ position and the connecting cable removed from the socket, the alarm system remains activated for approximately 24 hours, until the internal batteries have run down.

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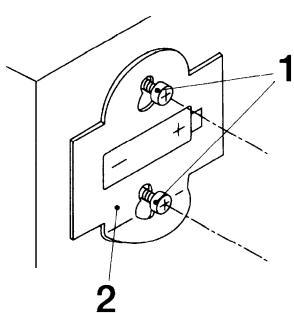
ALARM SYSTEM POWER SUPPLY

Four rechargeable nickel cadmium batteries supply the alarm system with power for approximately 24 hours in the event of power failure. The batteries are continuously recharged by the electronic equipment during normal operation.

ONLY USE RECHARGEABLE NICKEL CADMIUM BATTERIES :
AA (Mignon 1,2V / R6) 500 to 750 mAh.

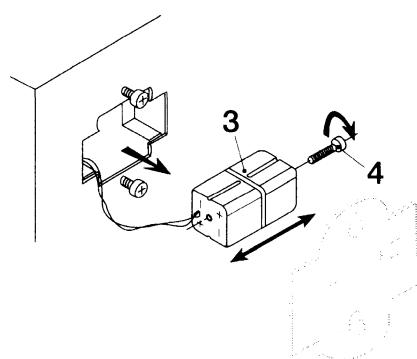
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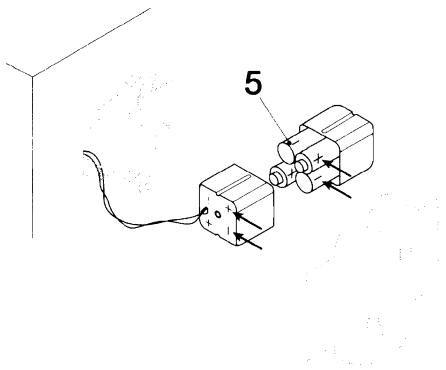
CHANGING THE STORAGE BATTERIES



- Unscrew the two screws (1) on the cover
- Push the cover (2) upwards a little.
- Remove the cover (2).

- Take out the storage battery casing (3).
- Remove the screw (4).
- Pull the two halves of the casing apart and remove the old batteries.





- Insert four new batteries (5) into the casing, making sure that the polarity is correct.

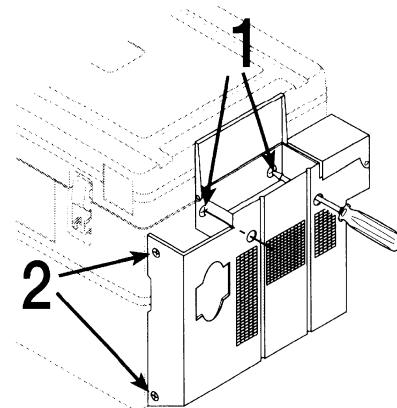
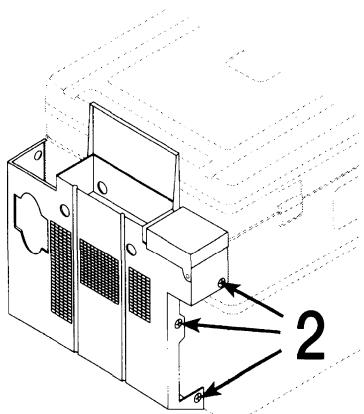
**INCORRECT CONNECTION OF TERMINALS
CAN CAUSE DAMAGE TO THE CONTROL BOARD !**

- Reassembly is in reverse order.

15

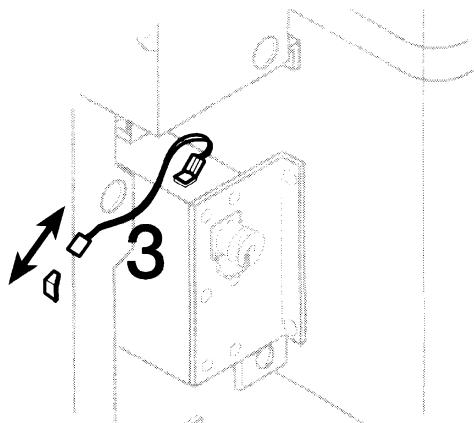
DISMANTLING THE COVER

- Unscrew the two screws (1) by inserting the screwdriver, as shown, through the holes in the storage compartment.



- Unscrew the remaining fastening screws (2) on the cover.

- Pull the green/yellow earth wire (3) from the contact plug on the cover and remove the cover.



Reassembly of the cover is in reverse order.

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MALFUNCTIONS

If there is a malfunction, it will be indicated visually and/or acoustically.

Power control lamp **2** flashes, acoustic alarm sounds:

- No mains or battery voltage.

Temperature control lamp **5** or **7** flashes, acoustic alarm sounds:

- Temperature inside the appliance is outside the limits allowed.

Alarm system power supply lamp **3** flashes, acoustic alarm sounds:

- Battery voltage too low.

Press the RESET button **4** to stop the acoustic signal. The lamps continue flashing until the malfunction is remedied.

Malfunctions can occur for a variety of reasons. The symptoms and their possible causes are to be found under „Troubleshooting“ (chapter 18).

Monitor the operation of the appliance for a while after the malfunction has been remedied. If malfunctions occur repeatedly or cannot be remedied, please contact customer service.

**REPAIRS MAY ONLY BE CARRIED OUT BY ELECTROLUX CUSTOMER
SERVICE OR AN AUTHORIZED SERVICE CENTRE.
ONLY USE ORIGINAL SPARE PARTS**

17

STORAGE

The appliance can be stored in closed rooms, without any special measures being taken and without packing. The ambient temperature during storage should not fall below -32°C (-25°F) or exceed +80°C (176°F). No special checks during storage are necessary.

If the appliance is switched off for a long period of time, carry out the following:

- If possible, leave the lid open slightly, to prevent unpleasant odours from forming.
- Remove the storage batteries, to prevent any damage occurring.

malfunctions

possible causes			remedy
AC - mains operation - no power			
DC - battery operation - no power			
Continual heating up of interior			
Continual cooling down of interior			
Poor refrigerating capacity			
Visual and acoustic alarm with high frequency			
No visual or acoustic alarm			
LED "POWER" flashes -			
acoustic alarm			
LED "BATTERY LOW VOLT." flashes -			
acoustic alarm			
LED "temperature too high" flashes -			
acoustic alarm			
LED "temperature too low" flashes -			
acoustic alarm			
No mains voltage	●	●	Check mains voltage supply
No battery voltage	●	●	Check battery voltage supply
Defective plug	● ●	●	Check plug
battery voltage \leq 9 V, or \geq 44 V	●	●	Check battery voltage
mains voltage \leq 85 V, or \geq 270 V	●	●	Check mains voltage
Storage battery voltage < 4,4 V		●	Check mains/battery voltage Check batteries
Storage batteries run down		●	Recharge storage batteries
Defective storage batteries		●	Replace storage batteries
Defective EMC filter	● ●		Replace combination circuit unit
Defective combination circuit unit	● ●	●	Replace combination circuit unit
Defective electronic control board RP200	● ● ● ● ●	●	Replace control board
Defective contact of connection strip X101	● ●	●	Check connection
Defective contact storage battery - control unit		● ● ●	Check connection
Defective contact of connection strip X102		●	Check connection
Short circuit in temperature control NTC detector		●	Replace thermoelectric unit
No contact NTC detector - temperature control	●		Replace thermoelectric unit
Defective thermoelectric unit		●	Replace thermoelectric unit
Defective inner ventilator		●	Replace ventilator
Defective outer ventilator		●	Replace ventilator
Dusty thermoelectric unit		●	Clean thermoelectric unit